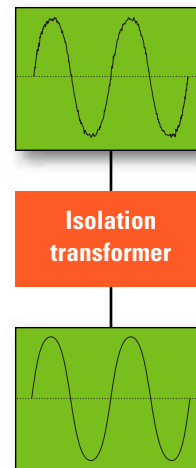


## isolation transformers

power quality program

# isolation transformers

An isolation transformer is used to prevent the electrical noise from one system or piece of equipment from affecting the operation of another system or piece of equipment.



Electrical noise is generated by turning on and off electrical loads and by the internal switching operations which occur in electronic equipment during their normal operation. While the noise of one particular piece of equipment may not be detrimental, the additive noise of several pieces of equipment may cause problems depending on the sensitivity of the equipment involved and the level of the electrical noise being generated. Isolation transformers may be installed to isolate a sensitive piece of electronic equipment from the noise present on the electrical system, or they may be installed to prevent a particularly noisy piece of equipment from affecting the rest of the electrical environment.

An isolation transformer is a transformer with physically separate primary and secondary windings. These windings are typically separated by an electrostatic shield, which is a sheet of nonmagnetic conducting material (copper or aluminum) connected to ground which acts as a shield to prevent the noise of one system from affecting another. The equipment served by the transformer is then isolated from the rest of the electrical system. In addition to providing isolation, three-phase (delta-wye) isolation transformers can also reduce the harmonic currents fed back to the source by nonlinear loads because balanced, three-phase harmonic currents will cancel each other out in the delta winding of the transformer.

